Profectis
Technischer Kundendienst

Serviceunterlage

Produkt-Nr.:
9025289/ 01

QUELLE

Type/Privileg-Nr.:
VTC-CD1017

UTS- Nr	999	QUELLE
Bestellnummer / Ausfnr	9025289 /	01
Gerätebezeichnung		UNIVERSUM MINI-ANLAGE
Gerätekennzeichen	G	Gerat
Warengattung	651	**DAT/DCC**
KD-Sektor	R	RUNDFUNK
Klassierung	STK	STEREOKOMBINATION
IFW-Fehlergruppe	205	RDF.,VERST.,TB.,PHONO,CD,CB
Type/Privileg/Universum Nr.		VTC-CD1017
Beschreibung		BGL. ART: 744/271
Verkaufspreis	152,88	DM
Serviceart	01	PROFECTIS
Garantie für Kunden	12	Monate
Sondervereinbarungen	0	SIEHE SERVICEART
Garantiereparatur	4063	PROFECTIS GMBH
Sondervereinbarungen	0	SIEHE SERVICEART

Katalog			**Seite / Liste**
Erstkatalog	15	SONDERKATALOGE H/W 2001	0
Letztkatalog	0	NOCH IM AKTUELLEN KATALOG	0

Geräte- Info

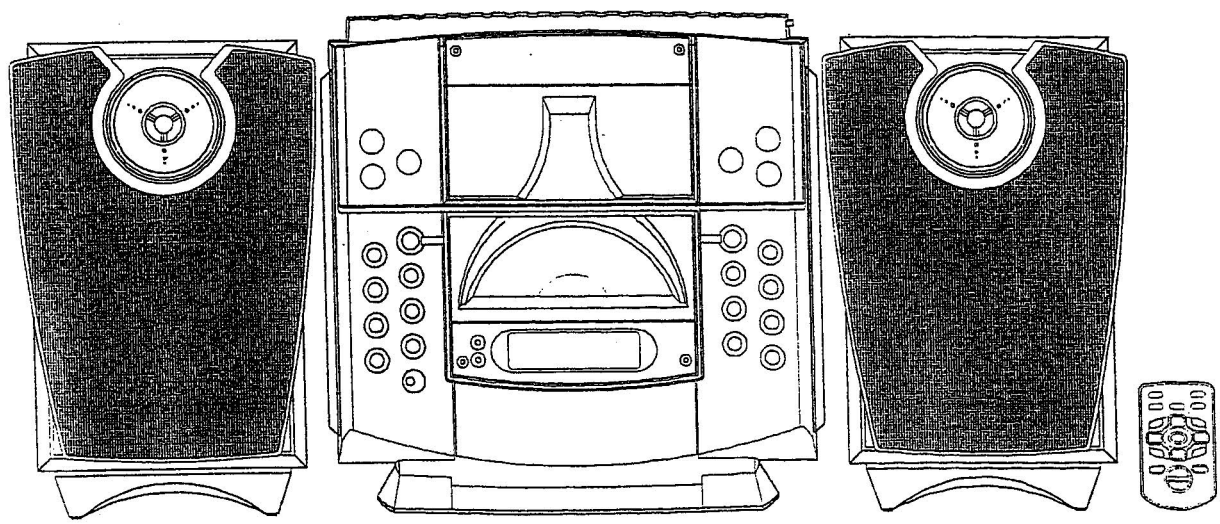
Technische Daten

Fehler

Stückliste

1...5...9	KZ	IdentNr	Bezeichnung	Stk.	Pos. im Bild	Herstellercode

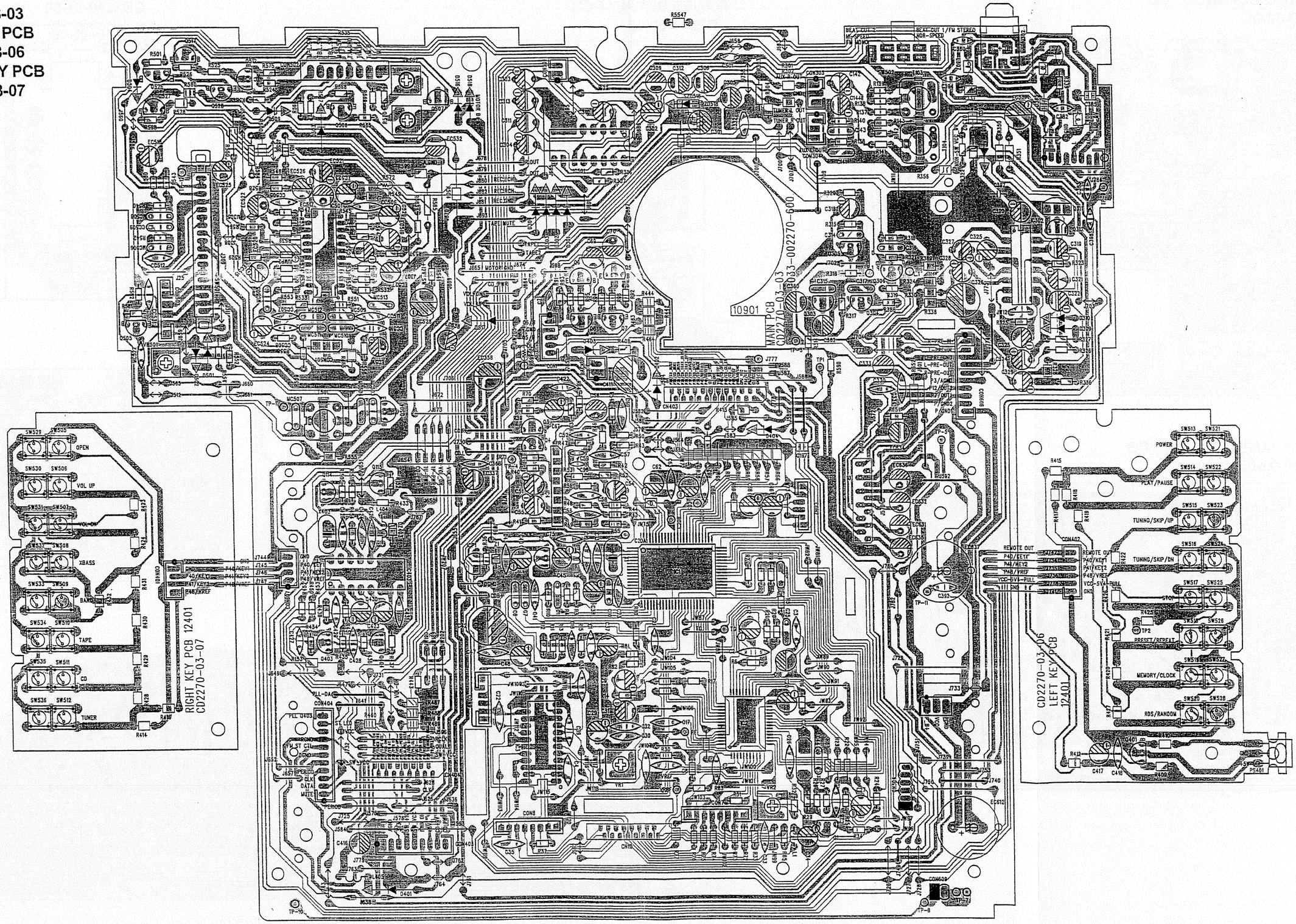
**********ENDE DER LISTE**********



CD 2271-10W

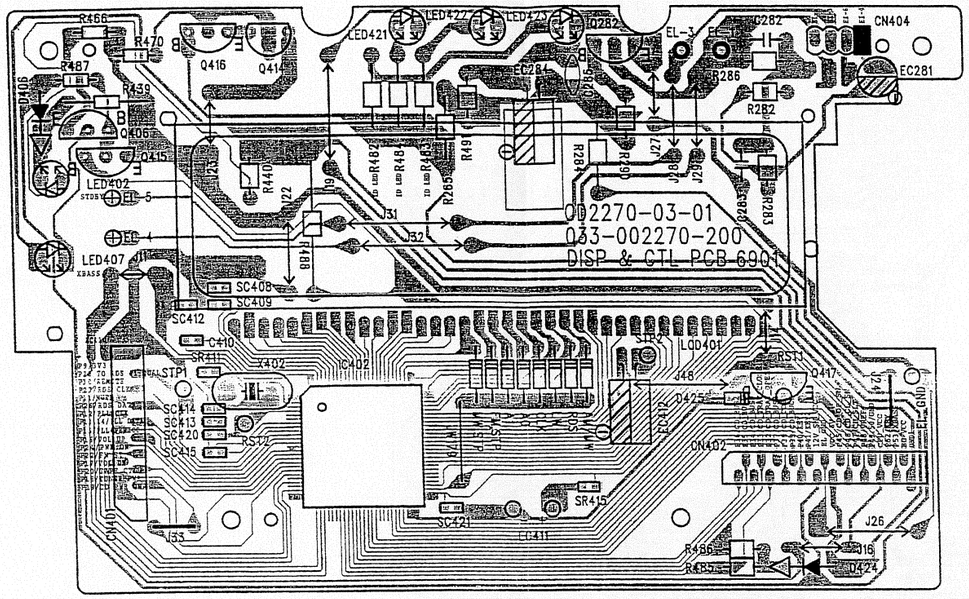
PRINTED CIRCUIT BOARDS

MAIN PCB
CD2270-03-03
LEFT KEY PCB
CD2270-03-06
RIGHT KEY PCB
CD2270-03-07

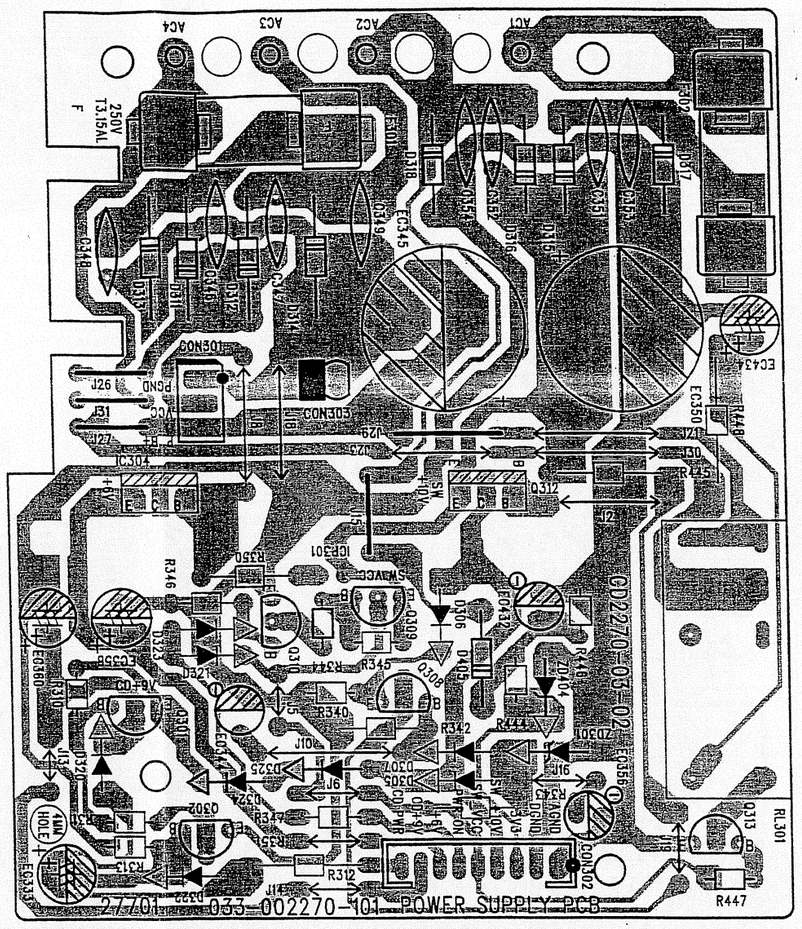


REMARKS:
PCB Part No.: 033-002270-600 of this model are assembled and aligned in FULL SET and are supplied in FULL SET for serving.

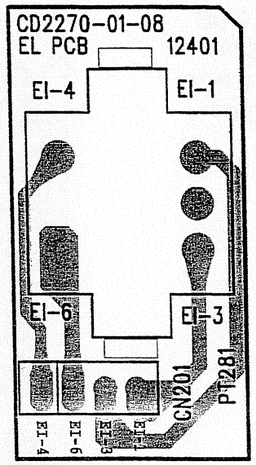
DISPLAY & CONTROL PCB
CD2270-03-01



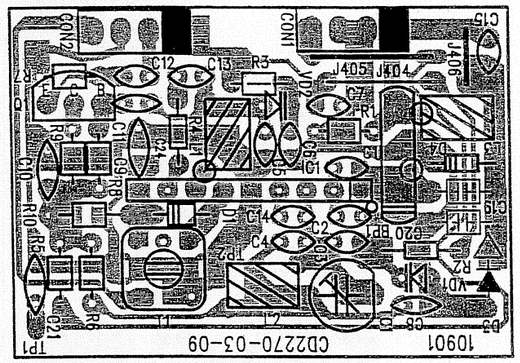
POWER SUPPLY PCB
CD2270-03-02



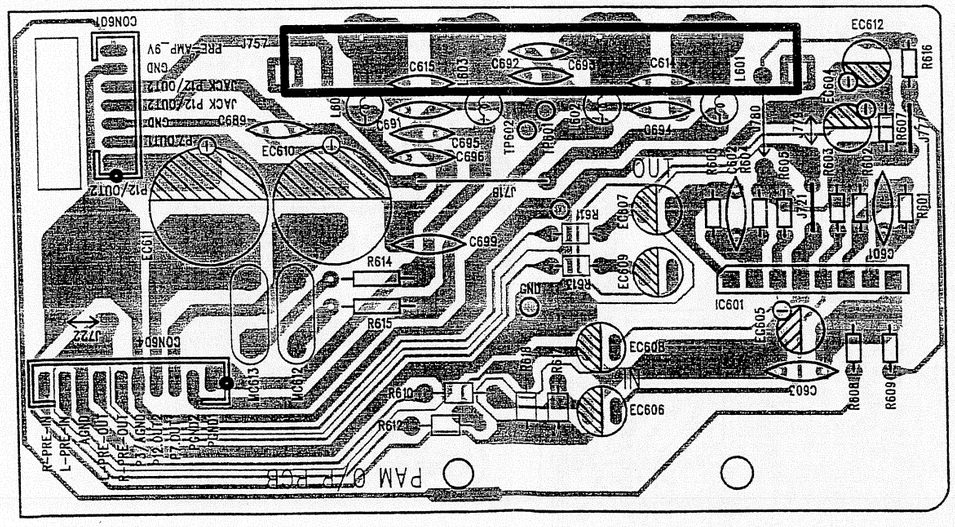
EL PCB
CD2270-01-08



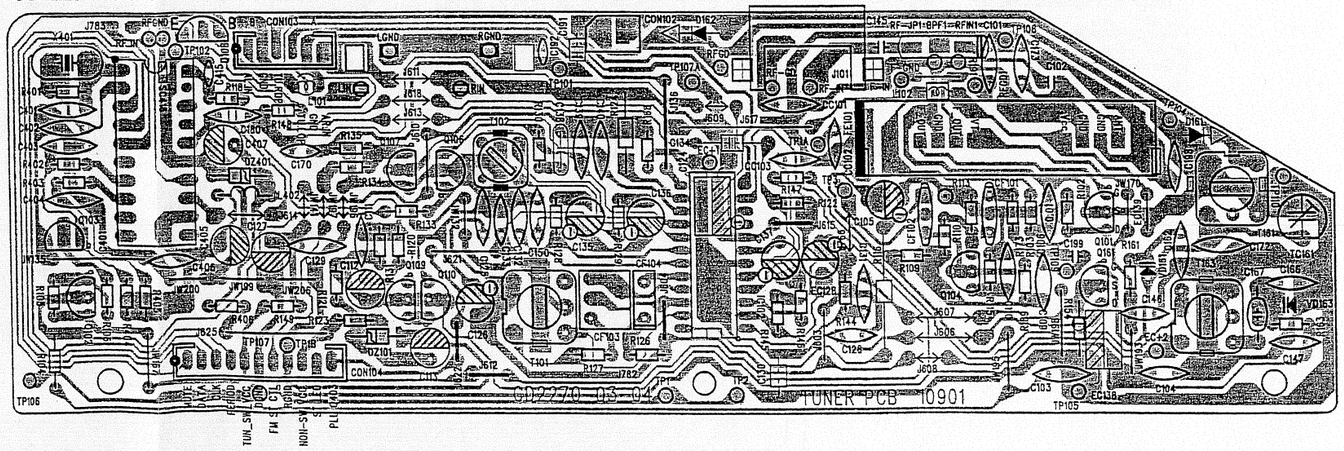
FM TUNER PCB
CD2270-03-09



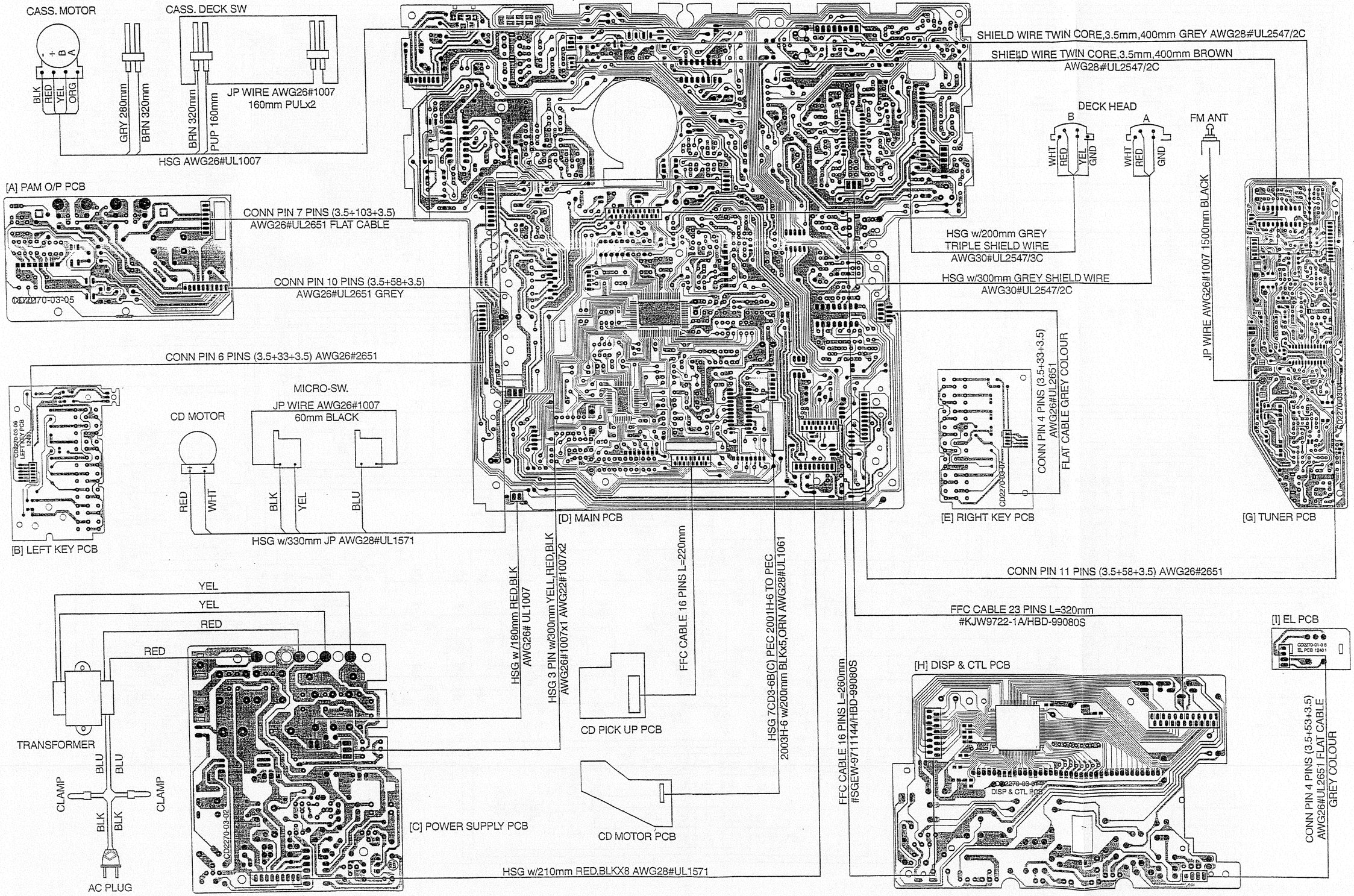
POWER AMPLIFIER O/P PCB
CD2270-03-05



TUNER PCB
CD2270-03-04

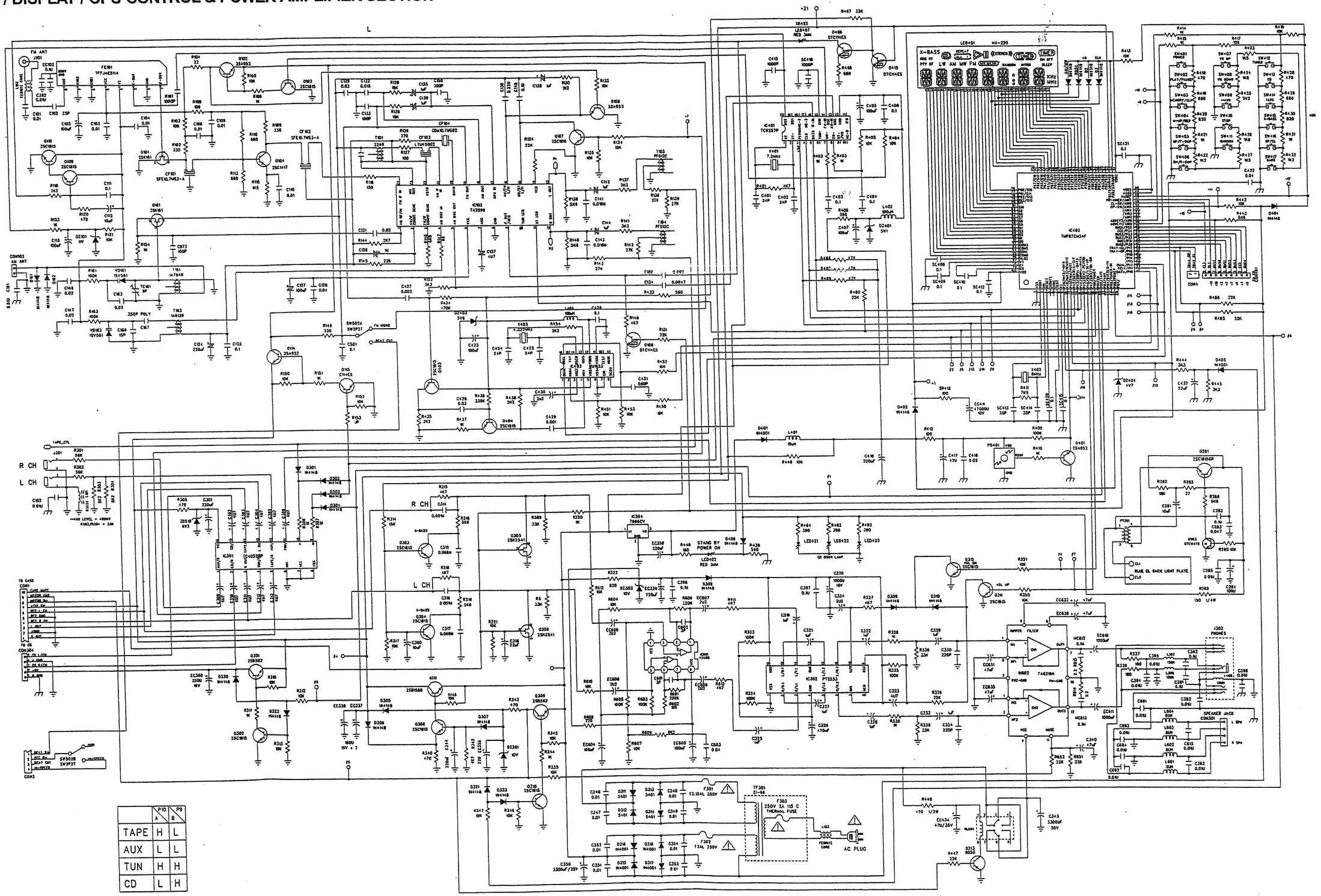


WIRING DIAGRAM



SCHEMATIC DIAGRAMS

TUNER / DISPLAY / CPU CONTROL & POWER AMPLIFIER SECTION

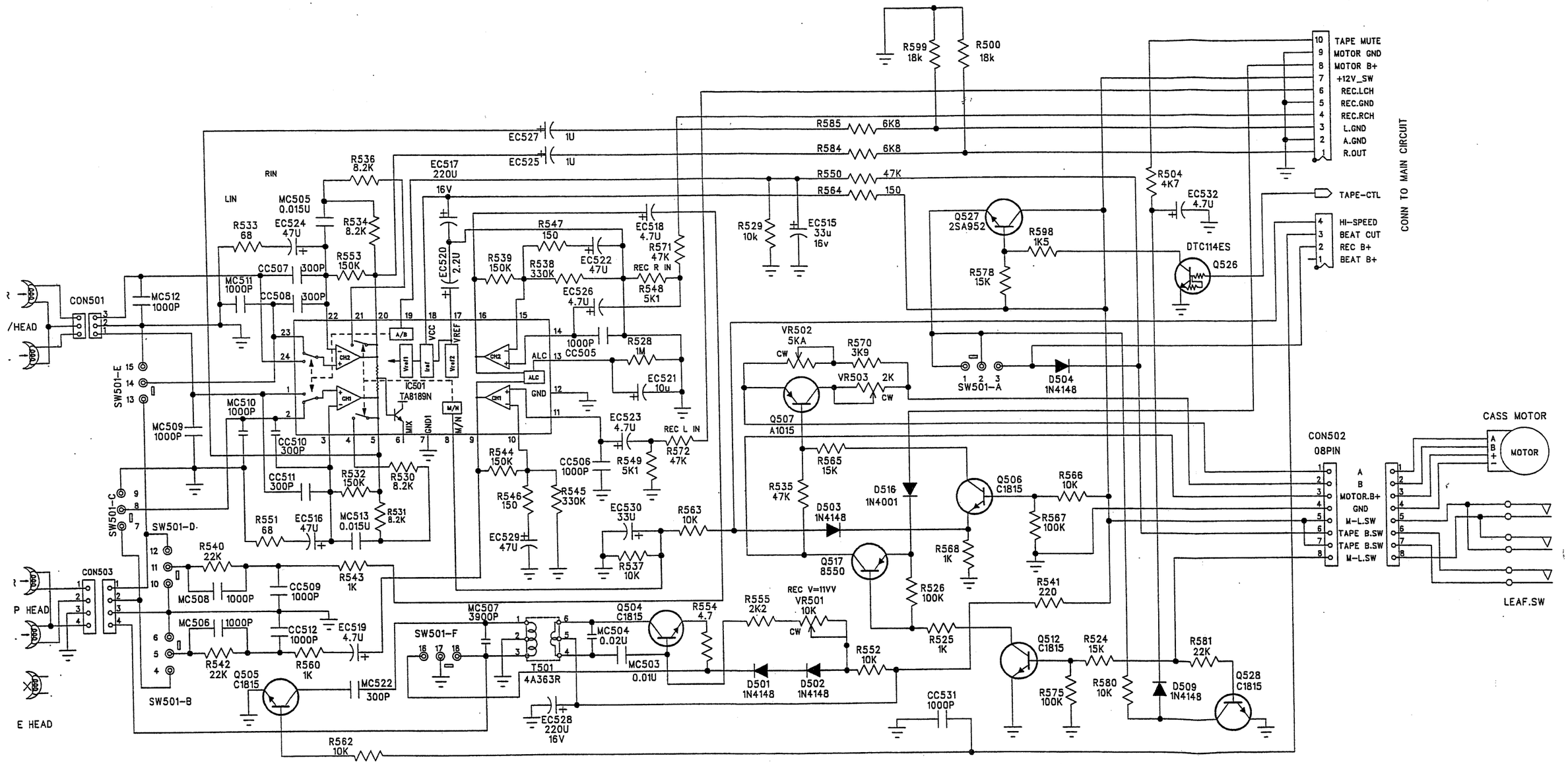


	P10 A	P9 B
TAPE	H	L
AUX	L	L
TUN	H	H
CD	L	H

NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 kohms).
2. All capacitance values are indicated in "µF" ($p=10^{-6}$ µF).

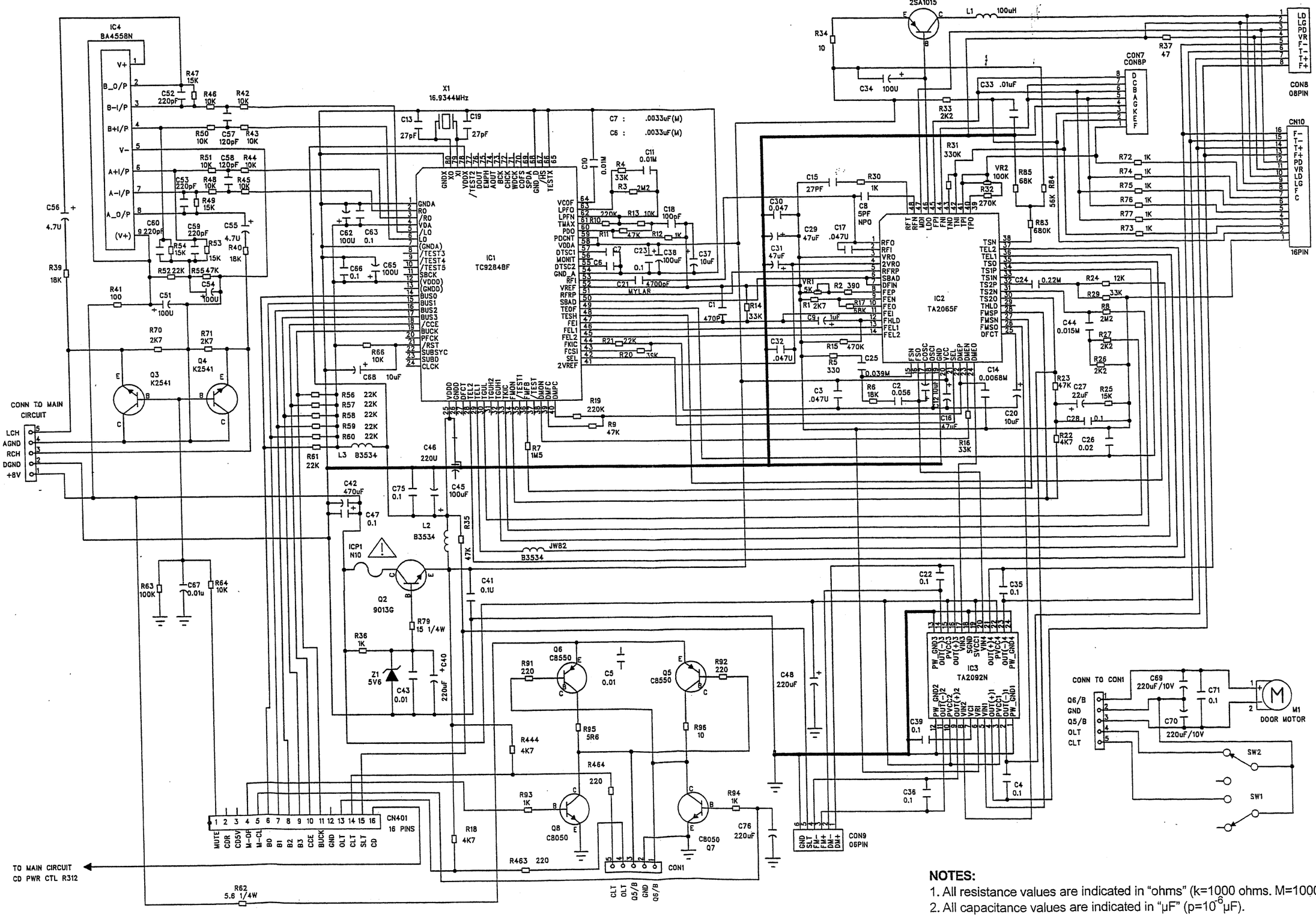
CASSETTE SECTION



NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 kohms).
2. All capacitance values are indicated in "μF" ($p=10^{-6}$μF).

CD SECTION

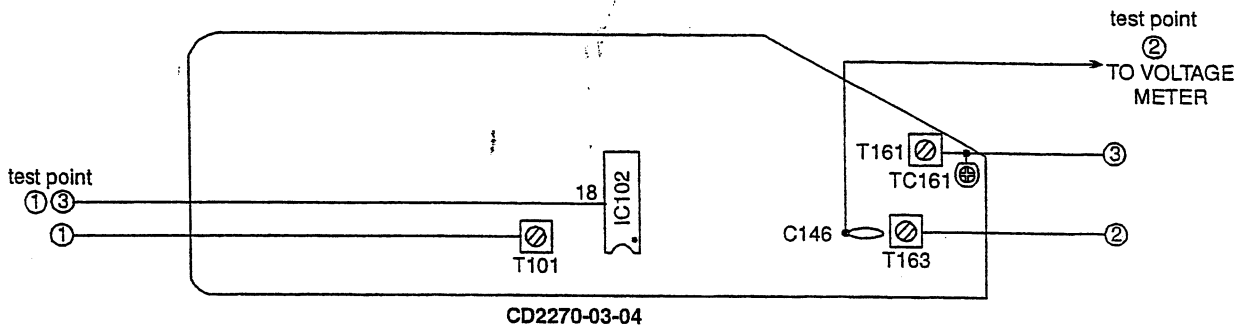


NOTES:

1. All resistance values are indicated in "ohms" (k=1000 ohms. M=1000 kohms).
2. All capacitance values are indicated in "µF" ($p=10^{-6}$ µF).

ALIGNMENT SET-UP PROCEDURES

TUNER SECTION



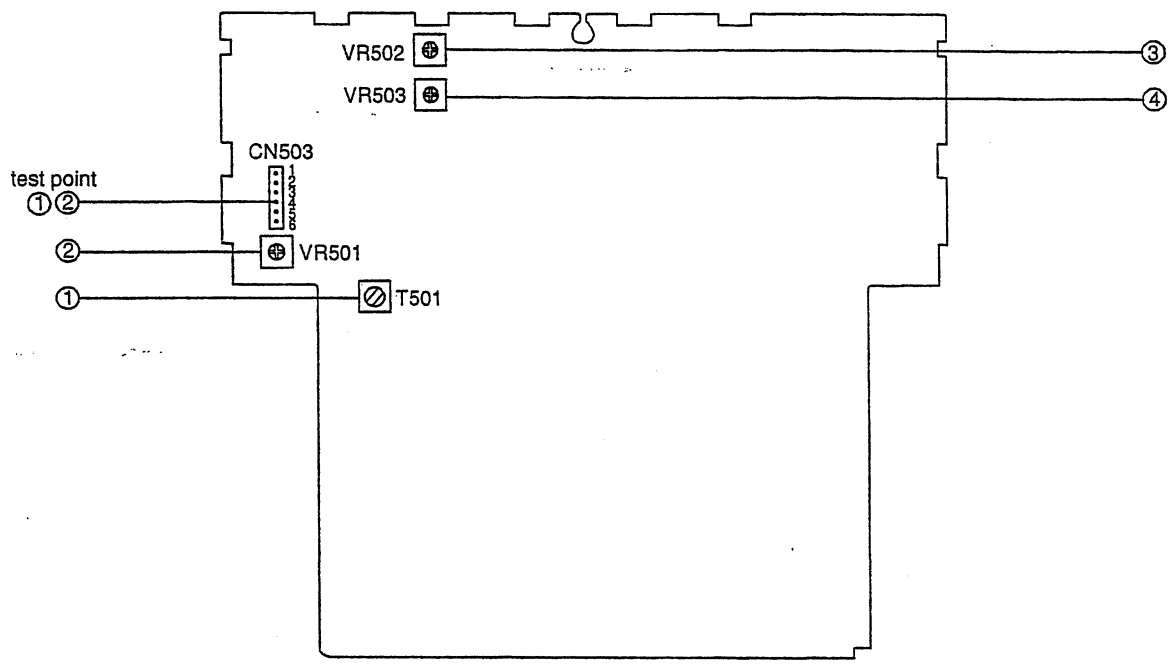
CD2270-03-04

1. AM IF Adjustment
   Test point: IC102 (TA2099N) 18Pin
   Adjustment location: T101
   T101 ---------- 450±5kHz

2. MW Frequency Range Adjustment
   Test point: C146
   Adjustment location: T163
   Set the tuner frequency to be 531kHz
   Adjustment T163 so that the test point voltage is 1.7±0.05V.

3. MW Tracking Adjustment
   Test point: IC102 (TA2099N) 18Pin
   Adjustment location: T161, TC161
   T161 ---------- 603kHz waveform max.
   TC161 ---------- 1404kHz waveform max.

CASSETTE SECTION



CD2270-03-03

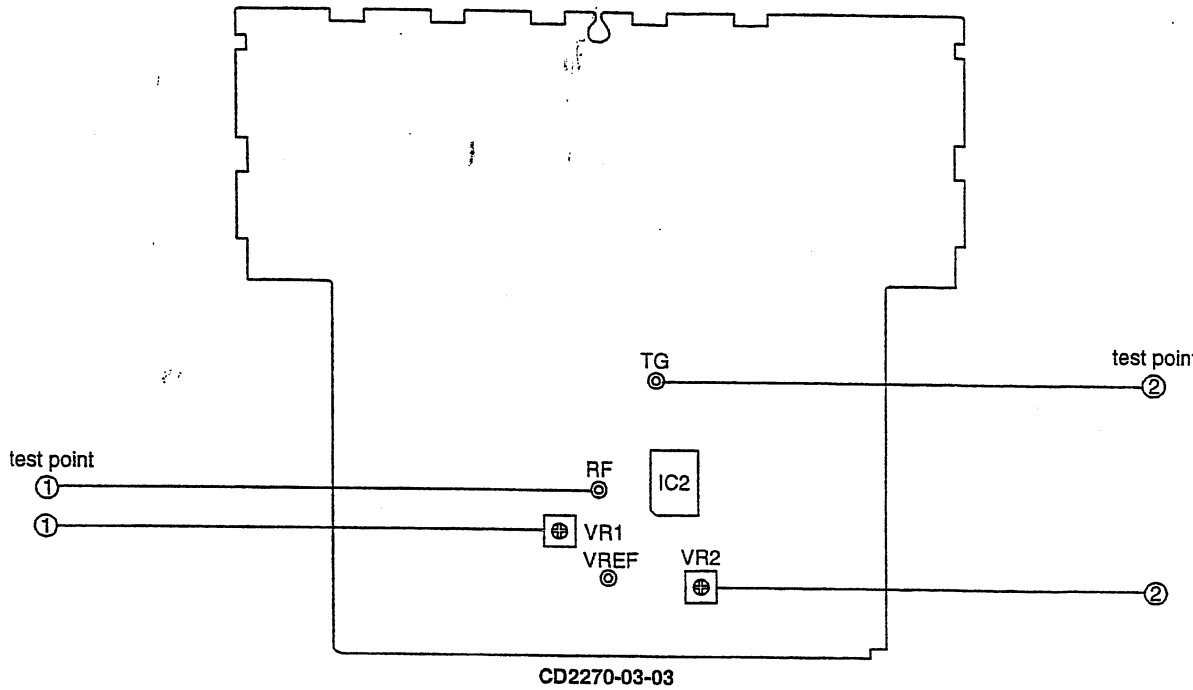
1. Bias Frequency Adjustment
   Test point: CON505 4Pin
   Adjustment location: T501
   T501 ---------- 60±2kHz

2. Bias Level Adjustment
   Test point: CON503 4Pin
   Adjustment location: VR501
   VR501 ---------- 15V

3. Normal Tape Speed Adjustment
   Test point: headphone jack
   Adjustment location: VR502
   VR502 ---------- 2975~3000Hz

4. High Tape Speed Adjustment
   Test point: headphone jack
   Adjustment location: VR503
   VR503 ---------- 5800~6000Hz

CD SECTION

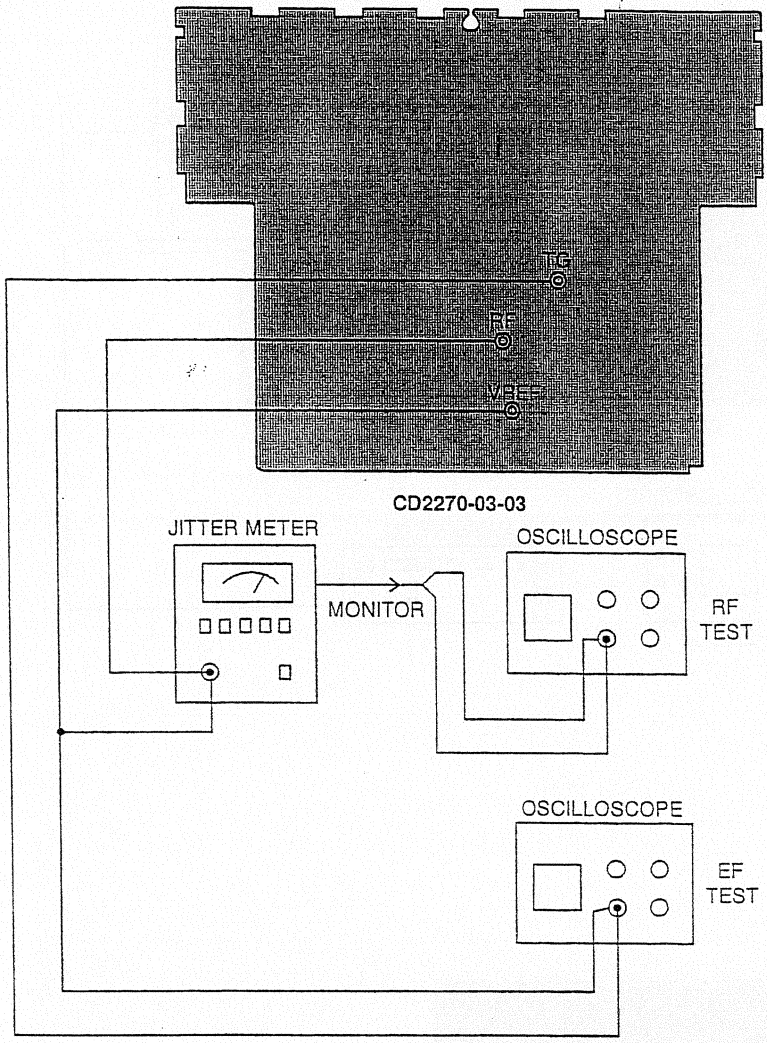


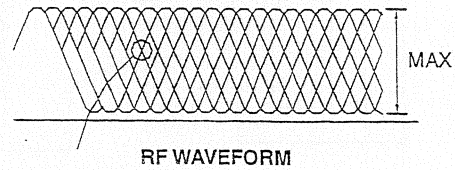
CD2270-03-03

1. RF Adjustment
   Test points: RF and VREF
   1) Connect a jitter meter to the test points.
   2) Connect the monitor of jitter meter to an oscilloscope.
   3) Turn on power switch.
   4) Load test disc (TCD-782) and play No. 2.
   5) Adjust VR1 so that RF waveform is maximum and value of jitter is minimum (30ns).
   6) Turn off power switch.

2. EF Balance Adjustment
   Test points: TG and VREF
   1) Connect an oscilloscope to the points.
   2) Turn on power switch.
   3) Load test disc (TCD-782) and play.
   4) Press SKIP button so that EF waveform appears.
   5) Adjust VR2 so that EF waveform is symmetrical.
   6) Turn off power switch.

CD SECTION

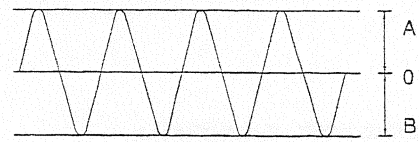




RF WAVEFORM

EYE PATTERN
MUST BE CLEAR

VOLT/DIV:0.5V
TIME/DIV:1mS



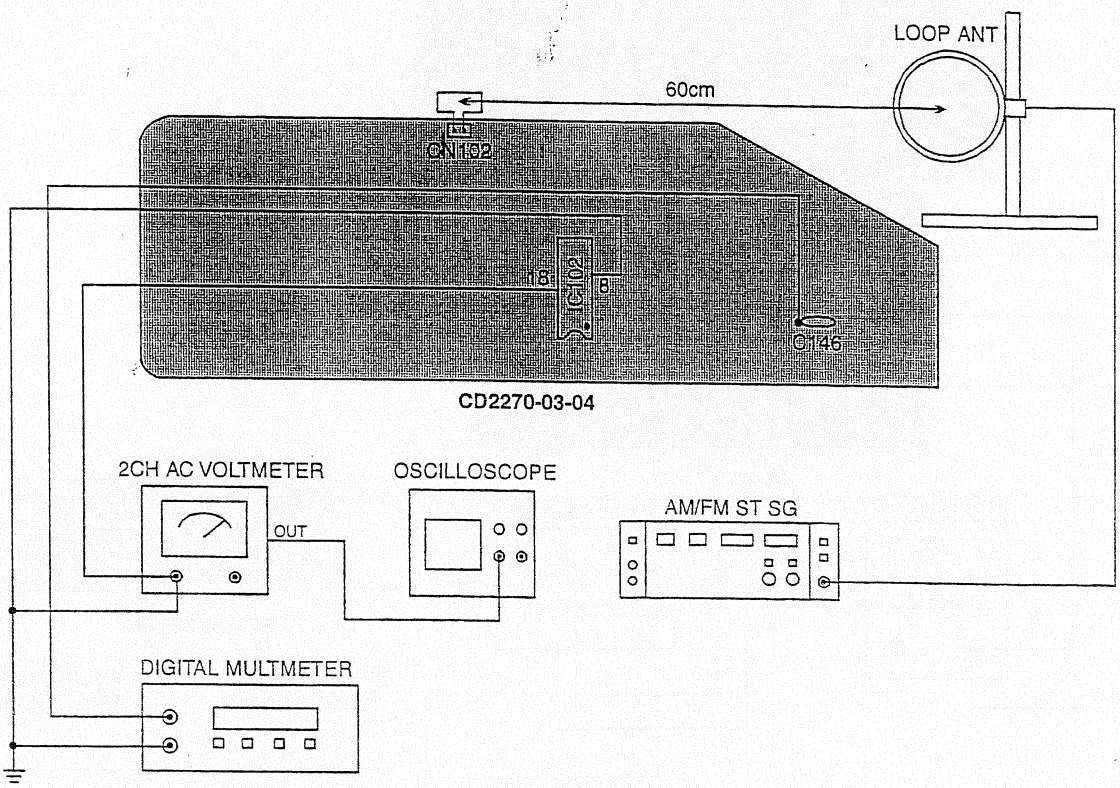
EF WAVEFORM

A=B

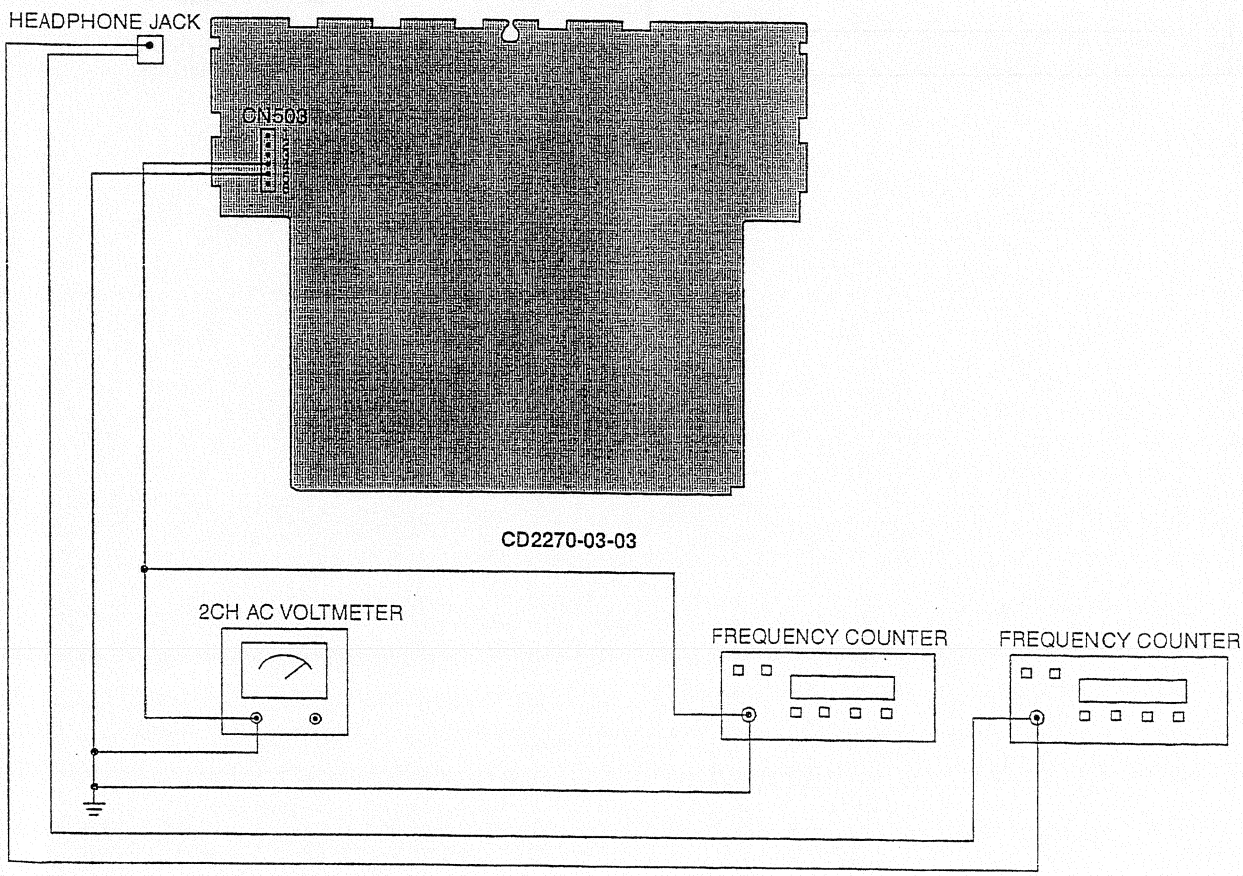
VOLT/DIV:20mV
TIME/DIV:1mS

EQUIPMENT CONNECTION DIAGRAMS

MW SECTION



CASSETTE SECTION



VOLTAGE CHART

THE MEASURED VALUE IS DC VOLTAGE
UNIT:V
TUNER SECTION
TEST CONDITION: SET AM/FM TUNER ON ONE FREQUENCY

IC102 (TA2099N)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
AM	1.87	2.95	1.88	1.82	2.25	1.71	1.29	1.10	0.49	1.58	0	1.27
FM	1.67	2.70	1.66	1.67	1.58	0.94	0.60	0.88	1.26	1.22	0	1.07
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
AM	1.29	4.40	1.35	1.44	0	1.26	2.95	0.89	1.87	0.60	1.87	1.86
FM	1.09	4.33	1.50	1.25	0	0.61	2.70	1.06	1.67	0.49	1.63	1.66

IC403 (BU1923)

PIN'S NUMBER	1	2	3	4	5	6	7	8
AM	0.31	1.16	0.24	0.23	0.45	0	0	0.23
FM	2.13	2.41	2.30	2.27	4.30	0	0	2.29
PIN'S NUMBER	9	10	11	12	13	14	15	16
AM	0	0	0	0.45	0.21	0	0	1.15
FM	0	0	0	4.30	0	2.06	0	2.25

IC401 (TC9257P)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
AM	2.79	2.79	4.85	4.85	0	0	0	0	4.32	2.41
FM	2.76	2.76	4.83	4.82	0	0	0.73	0	2.06	1.91
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
AM	2.45	5.56	2.75	0	0	2.71	2.48	2.49	2.11	1.16
FM	2.01	5.51	0	2.70	0	2.70	2.07	1.93	1.73	1.15

TRANSISTOR	Q102(2SA952)			Q103(2SC1815)			Q106(2SA952)		
	E	C	B	E	C	B	E	C	B
FM	5.65	5.68	4.87	0	0	0.69	1.30	0	5.61
AM	5.79	0	5.82	0	5.13	0.04	0.50	0	0

TRANSISTOR	Q109(2SC1815)			Q110(2SC1815)			Q1(535C)		
	E	C	B	E	C	B	E	C	B
FM	0.64	2.45	1.08	0	2.45	0.64	0.70	1.72	1.39

TRANSISTOR	Q104(2SC1417)			Q101(2SK161)		
	E	C	B	G	D	S
FM	2.39	4.37	1.69	0	3.75	0

TRANSISTOR	Q161(2SK161)		
	G	S	D
AM	0	0.52	2.92

TRANSISTOR	Q107(2SC1815)		
	E	C	B
MONO	0	0	0.67
ST	0	1.23	0

VOLTAGE CHART - CONTINUED

CASSETTE & POWER AMPLIFIER SECTION

TEST CONDITION: TAPE PLAY

IC301 (BU4052BC/B)

PIN'S NUMBER	1	2	3	4	5	6	7	8
TAPE	3.05	0.06	0.85	0.42	0.71	0	0	0
TUNER	2.31	0.19	0.21	0.20	0.27	0	0	0
CD	1.64	0.17	0.16	0.19	0	0	0	0
AUX	0.16	0.16	0.15	0.16	0.02	0	0	0
PIN'S NUMBER	9	10	11	12	13	14	15	16
TAPE	0.09	4.22	0.28	0.01	0.25	0.23	0.28	5.90
TUNER	4.12	4.13	0.23	0.03	0.18	0.14	0.22	5.90
CD	4.18	0.15	0.20	0.15	0.19	0	0.18	5.90
AUX	1.94	2.03	0.19	0.18	0.14	0	0.17	5.90

IC302 (PT2253A)

PIN'S NUMBER	1	2	3	4	5	6	7	8
TAPE	0	2.73	2.73	2.73	2.73	2.73	5.43	5.45
PIN'S NUMBER	9	10	11	12	13	14	15	16
TAPE	5.45	5.50	2.74	2.74	2.74	2.73	2.74	5.50

IC304 (L7806CV)

PIN'S NUMBER	1	2	3
TAPE	7.55	0	6.03

TRANSISTOR	Q512(C1815)			Q517(8550)			Q526(DTC114ES)		
	E	C	B	E	C	B	E	C	B
DECL A PLAY	0	0	0.73	10.36	10.30	9.57	0	11.76	0
TRANSISTOR	Q527(8050)			Q528(C1815)					
	E	C	B	E	C	B			
DECL A PLAY	11.17	11.92	11.76	0	0	0.68			

TEST CONDITION: TAPE RECORD

TRANSISTOR	Q504(C1815)			Q505(C1815)		
	E	C	B	E	C	B
BEAT OFF	0	8.98	0.58	0	14.42	0

TRANSISTOR	Q506(C1815)			Q507(C1815)		
	E	C	B	E	C	B
HIGH SPEED	9.39	9.40	10.01	8.38	8.38	7.72
NORMAL SPEE	1.26	1.26	1.97	5.03	9.07	9.55

TRANSISTOR	Q303(2SC1815)			Q304(2SC1815)		
	E	C	B	E	C	B
OFF BASS	0	0	0.58	0	0	0.58

TRANSISTOR	Q301(2SB562)			Q302(2SC1815)			Q308(2SC1815)			Q312(2SB1586)		
	E	C	B	E	C	B	E	C	B	E	C	B
CD	6.16	6.19	5.42	0	0	0.68	5.60	6.90	6.26	7.56	6.39	6.88

TRANSISTOR	Q309(2SB562)			Q310(2SC1815)		
	E	C	B	E	C	B
TAPE	7.58	7.53	6.90	0	0	0.68

VOLTAGE CHART - CONTINUED

IC501 (TA8189N)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
DECK A PLAY	0	0	1.25	1.32	1.32	1.50	0	0	1.87	1.25	0	0
DECD A REC	0	0	1.25	1.33	1.33	2.28	0	0	1.83	1.25	0	0
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
DECK A PLAY	0.84	0	0.88	1.85	9.12	10.28	1.32	1.24	1.32	1.25	0	0
DECD A REC	1.02	0	1.25	0.86	1.43	10.41	2.07	1.33	1.37	1.25	0	0

IC601 (BA4558N)

PIN'S NUMBER	1	2	3	4	5	6	7	8
TAPE	3.93	3.72	3.68	0	3.66	3.72	3.93	6.75

IC602 (TA8216H)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
TAPE	1.72	0	0	0	1.72	4.01	5.46	4.18	12.80	0	3.49	5.35

CD SECTION

TEST CONDITION: CD PLAY

IC1 (TC9284BF)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0	2.59	2.81	4.87	2.82	2.57	0	4.84	4.84	4.85	4.53	4.87
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	0	4.75	4.76	7.74	4.74	4.72	4.80	2.27	4.86	0	0	0
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	4.88	0	2.07	2.07	2.07	2.07	2.05	2.07	1.70	2.07	4.84	1.81
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	4.84	2.07	2.07	2.27	4.12	4.85	2.45	2.45	2.07	2.06	2.07	2.07
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
	2.07	2.51	2.85	2.07	2.10	0	2.38	4.87	2.36	4.88	4.88	2.07
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70	71	72
	2.03	2.07	1.98	1.40	0	4.84	0	0	1.62	2.42	2.42	2.41
PIN'S NUMBER	73	74	75	76	77	78	79	80				
	2.47	0	2.10	4.81	4.88	1.80	1.81	0				

IC2 (TA2065F)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	2.17	2.05	2.07	4.12	2.47	2.54	2.54	2.05	2.05	2.04	2.07	2.01
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	2.05	2.05	2.06	2.05	2.03	2.45	0	4.87	4.85	2.10	2.07	2.20
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	2.30	2.05	2.07	2.07	2.02	2.07	2.06	2.07	2.07	2.07	2.07	2.07
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	2.07	2.07	1.78	2.06	2.03	1.77	2.04	2.05	3.68	0.20	2.10	2.31

IC3 (TA2092N)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0	4.29	9.38	4.55	2.09	2.09	4.42	2.08	4.41	9.37	4.45	0
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	0	4.04	9.38	4.82	2.18	0	9.38	2.22	4.47	9.38	4.44	0

VOLTAGE CHART - CONTINUED

IC4 (BA4558N)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9
	0	5.01	4.54	4.52	0	4.51	4.50	4.96	7.42

TRANSISTOR	Q2(9103)			Q1(A1015)		
	E	C	B	E	C	B
	4.89	6.12	5.29	4.06	2.42	3.32

TRANSISTOR	Q5(8550)			Q6(8550)			Q7(8050)			Q8(8050)		
	E	C	B	E	C	B	E	C	B	E	C	B
OPEN	6.03	5.47	5.55	6.01	0	5.56	0	5.38	0	0	0	0.76
CLOSE	5.88	0	5.55	5.86	5.46	5.55	0	0	0.76	0	5.40	0

CONTROL SECTION

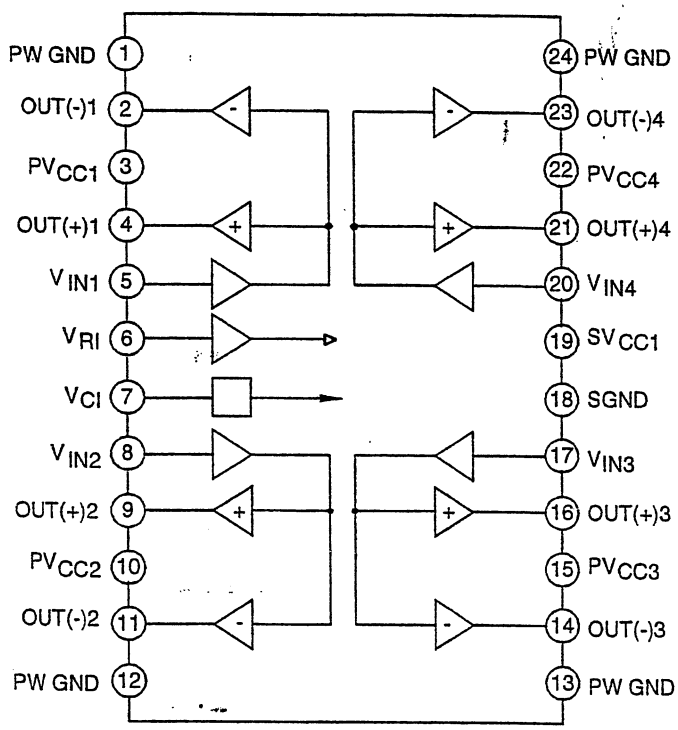
TEST CONDITION: CD PLAY & TUNER

IC402 (TMP87PP24AF)

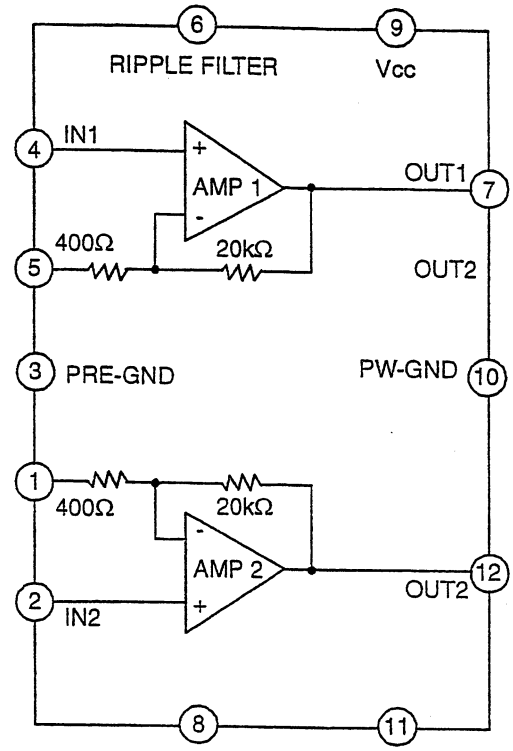
PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
CD	0	1.70	1.70	4.72	\	\	0	0.99	2.97	5.29	0	4.87
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
CD	0.03	0.03	4.87	0.02	0.05	4.89	4.87	0.02	0.02	5.34	1.71	4.79
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
CD	1.72	0	0	0.06	\	\	\	\	\	0.23	0.17	0.16
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
CD	0.11	0.07	4.84	4.99	5.00	\	\	\	5.32	0.02	4.91	4.99
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
CD	0.02	0.02	4.86	0.07	4.60	\	\	\	\	\	1.45	1.44
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70	71	72
CD	1.46	1.45	1.45	1.46	1.46	1.46	1.46	1.46	1.45	1.45	1.45	1.45
PIN'S NUMBER	73	74	75	76	77	78	79	80	81	82	83	84
CD	1.45	1.46	1.47	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
PIN'S NUMBER	85	86	87	88	89	90	91	92	93	94	95	96
CD	1.46	1.46	1.46	1.46	1.46	1.46	\	1.46	1.46	1.46	1.46	2.83
PIN'S NUMBER	97	98	99	100								
CD	1.93	1.70	0.74	4.86								

IC LEAD IDENTIFICATION AND INTERNAL DIAGRAMS

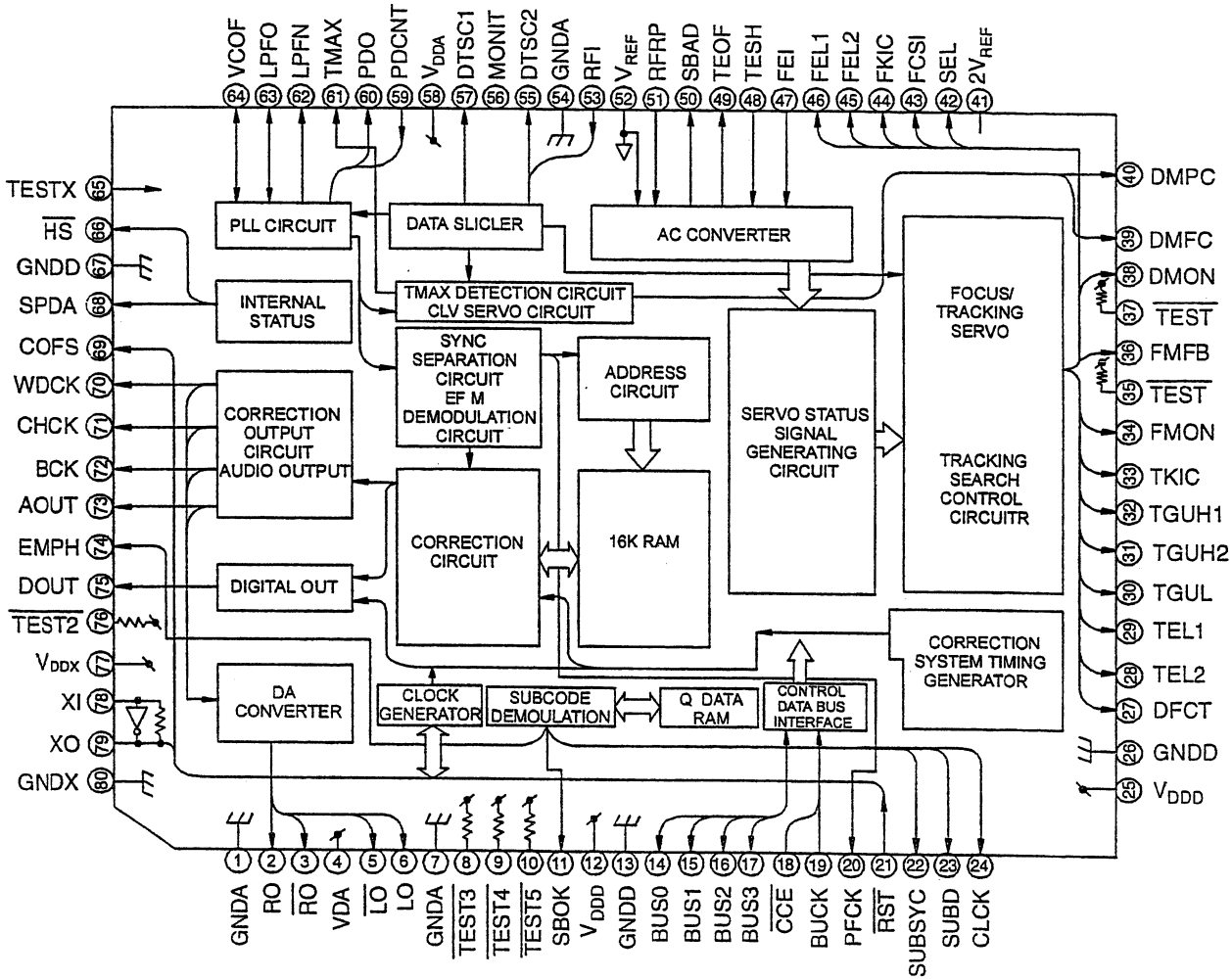
IC3 TA2092N



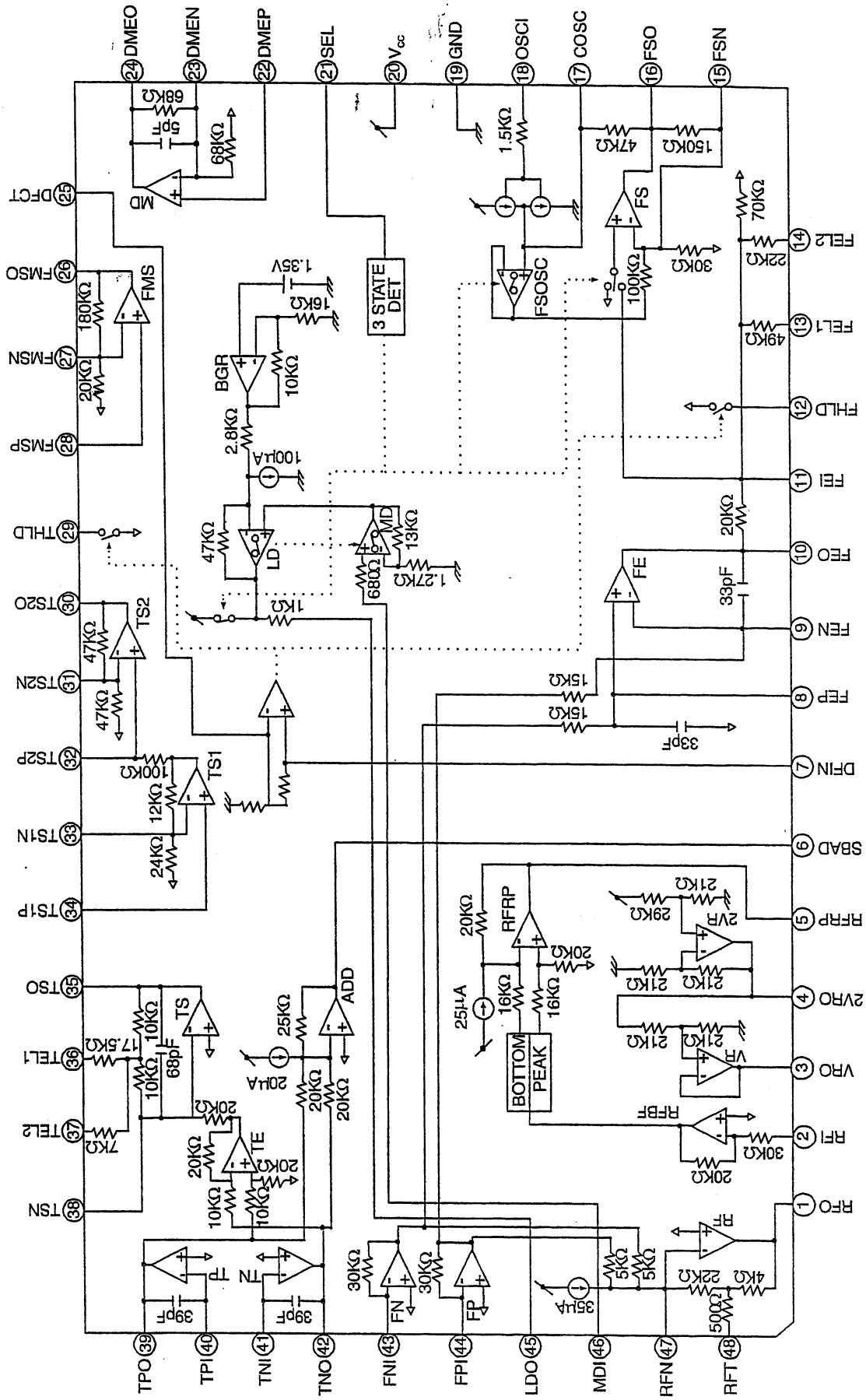
IC602 TA8216H



IC1 TC9284BF



IC2 TA2065F


DMEO
DMEN
DMEP
SEL
V_{cc}
GND
OSCI
COSC
FSO
FSN
DFCT
FMSO
FMSN
FMSP
THLD
TS2O
TS2N
TS2P
TS1N
TS1P
TSO
TEL1
TEL2
TSN
TPO
TPI
TNI
TNO
FNI
FPI
LDO
MDI
RFN
RFT
RFO
RFI
VRO
2VRO
RFRP
SBAD
DFIN
FEP
FEN
FEO
FHLD
FEL1
FEL2
MD
FMS
BGR
3 STATE DET
FSOSC
FS
LD
TS2
TS1
TS
ADD
TE
TP
TN
FN
FP
FE
RFRP
BOTTOM PEAK
VR
RF
RFBF
1.35V
100μA
25μA
20μA
35μA
68KΩ
5pF
1.5KΩ
47KΩ
150KΩ
70KΩ
30KΩ
100KΩ
22KΩ
49KΩ
180KΩ
20KΩ
16KΩ
10KΩ
2.8KΩ
13KΩ
1.27KΩ
1KΩ
33pF
15KΩ
100KΩ
12KΩ
24KΩ
17.5KΩ
68pF
7KΩ
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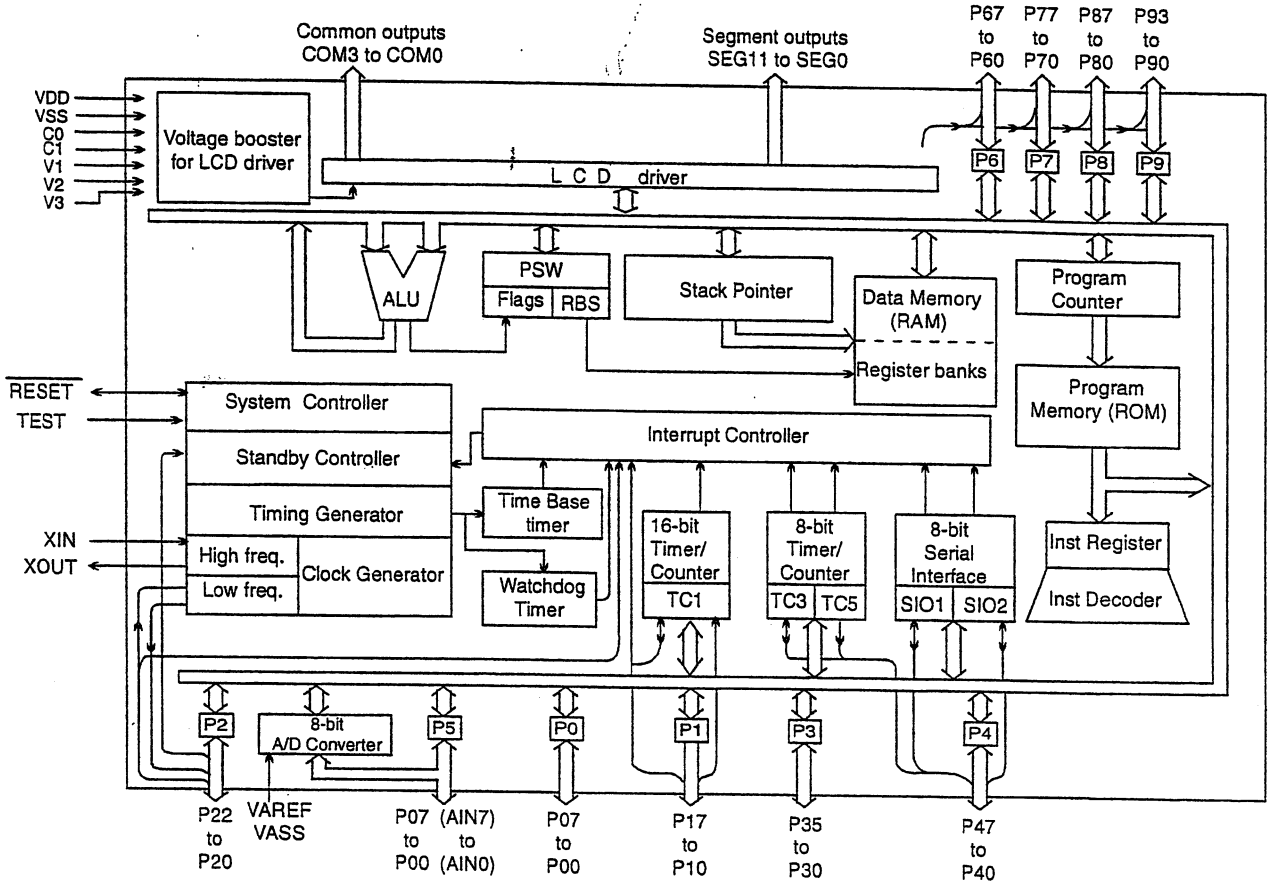
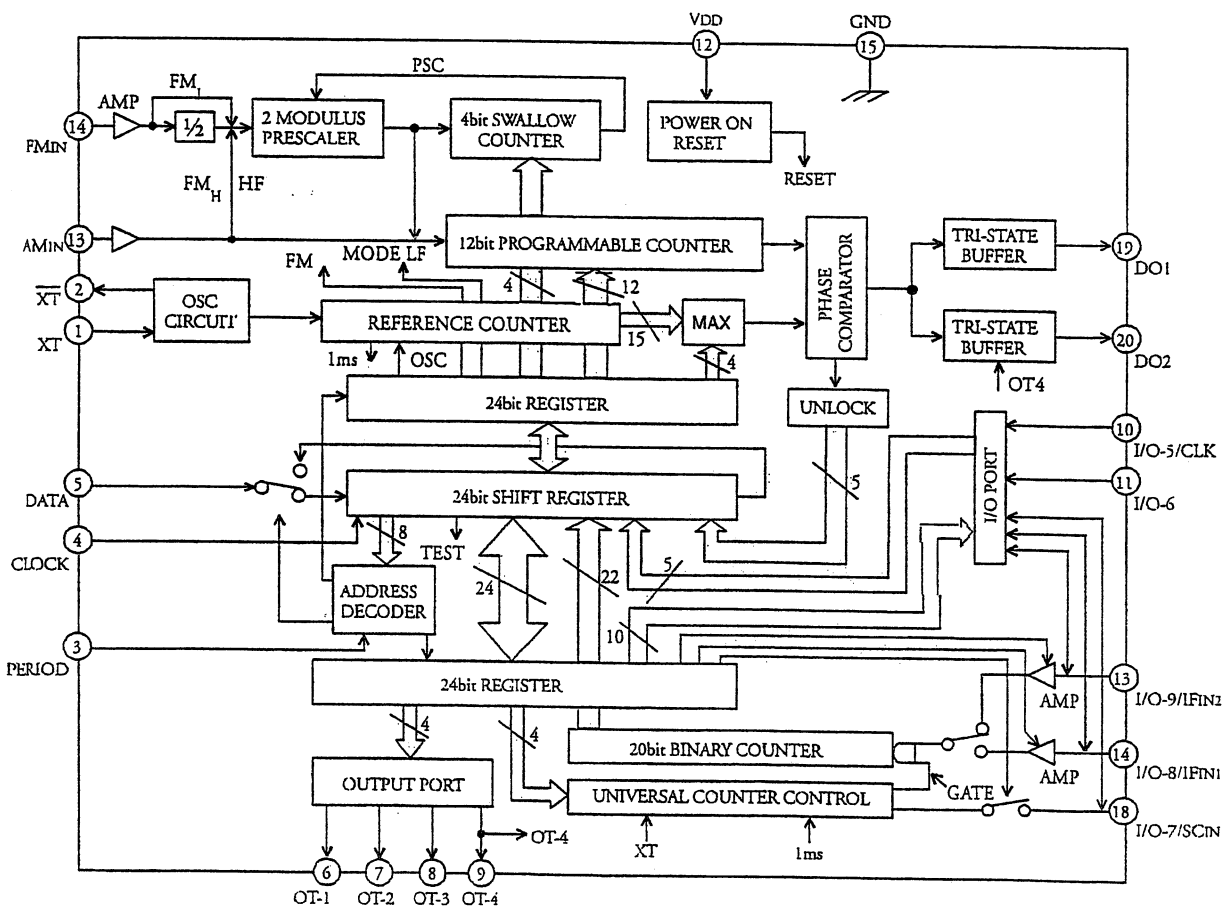
5KΩ
4KΩ
500Ω
29KΩ
21KΩ
2VR
VR
RFBF

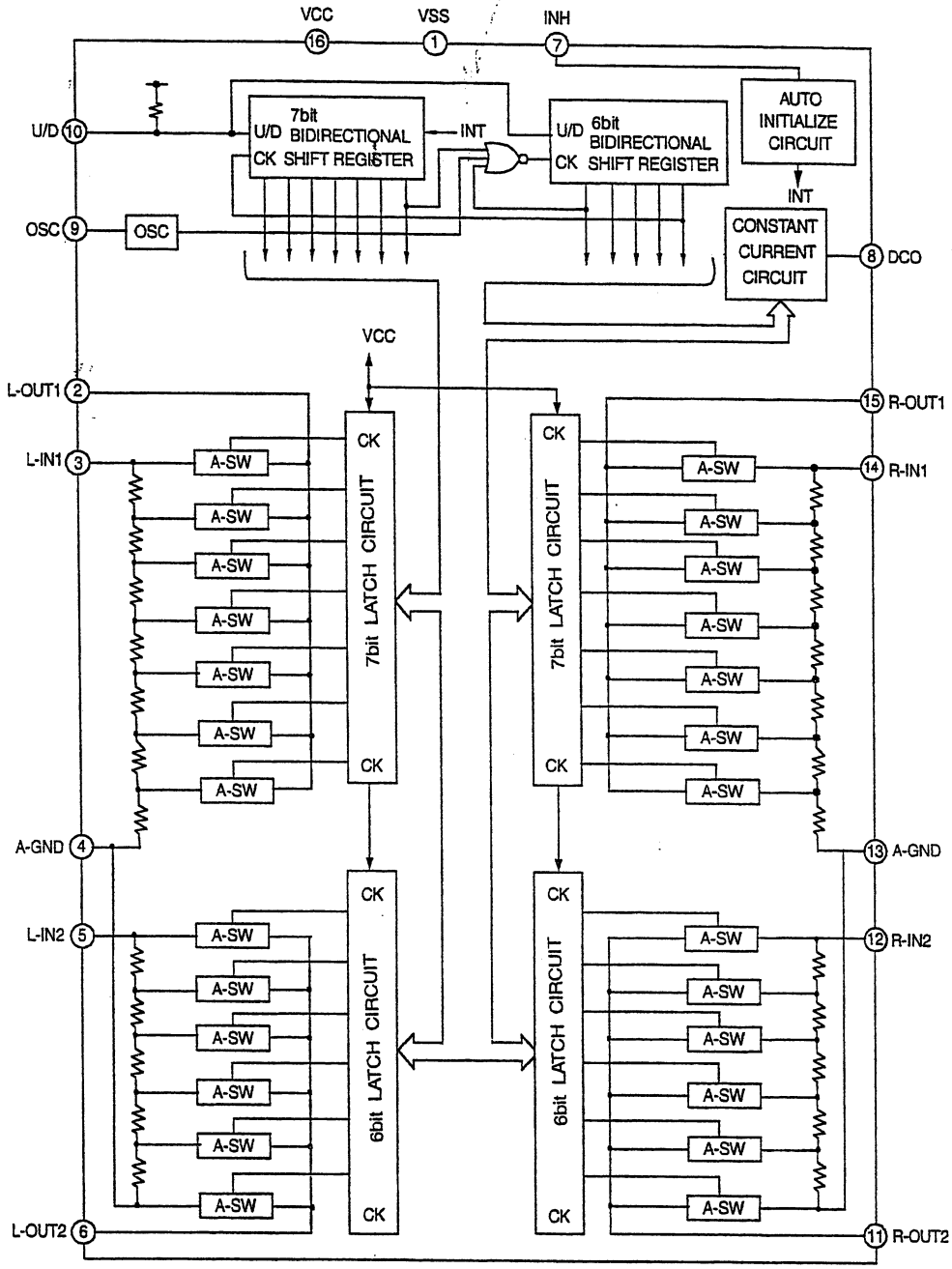
IC402 TMP87PP24AF



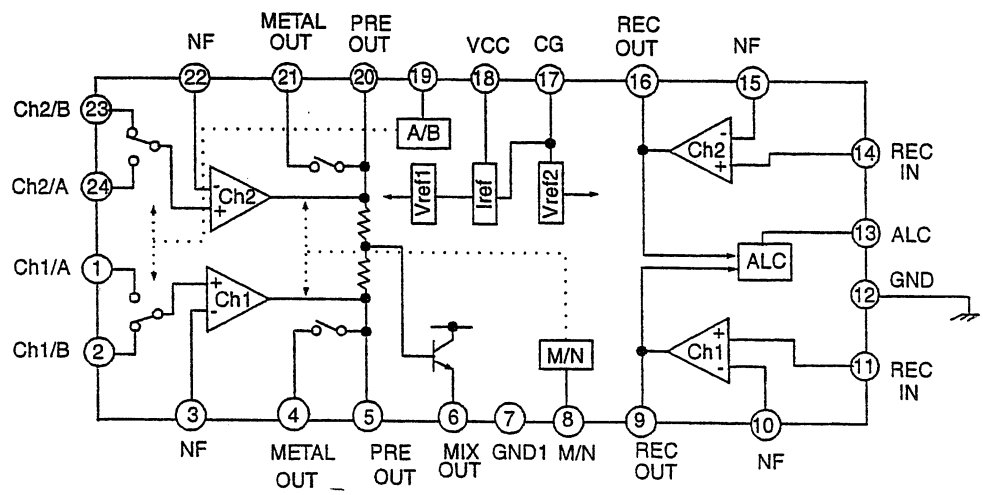
IC401 TC9257P



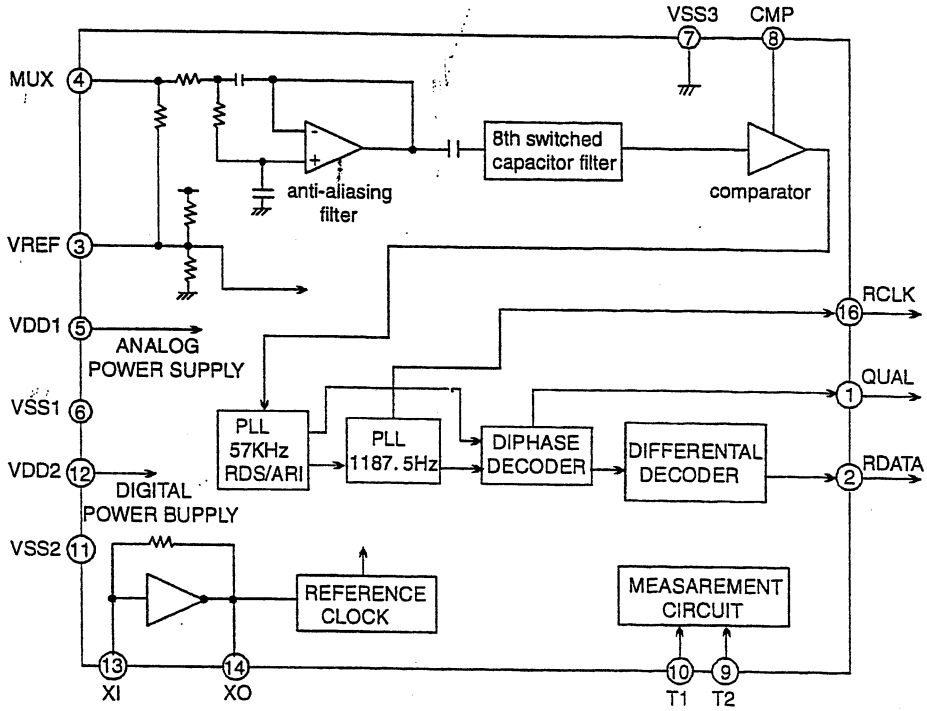
IC302 PT2253A



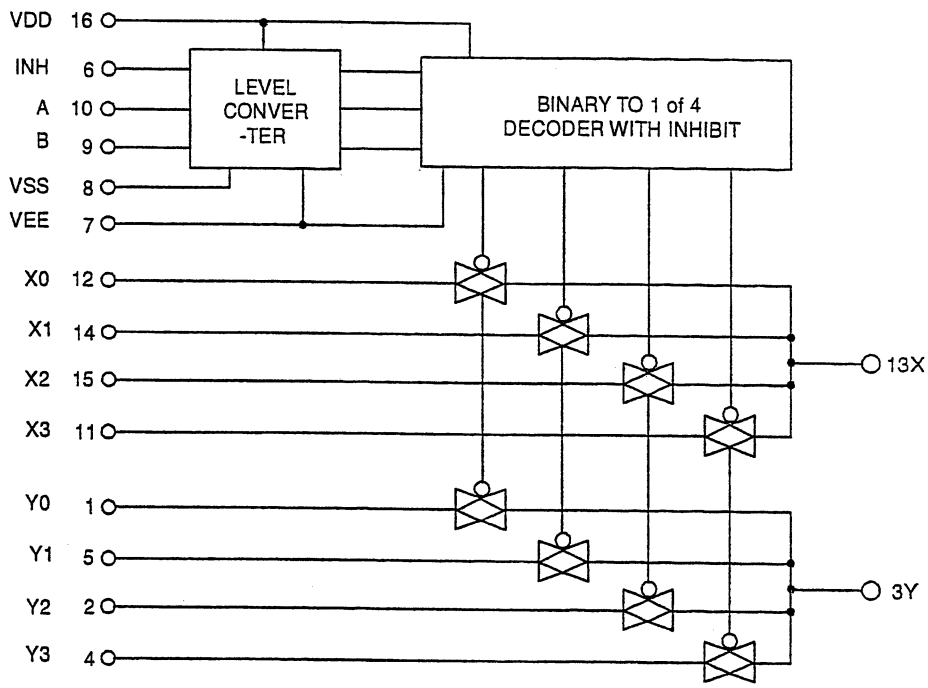
IC501 TA8189N



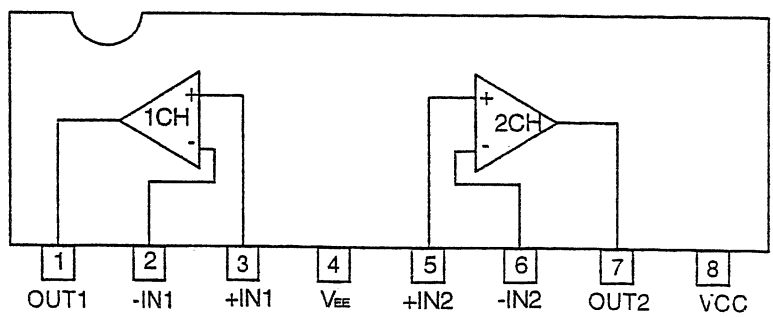
IC403 BU1923



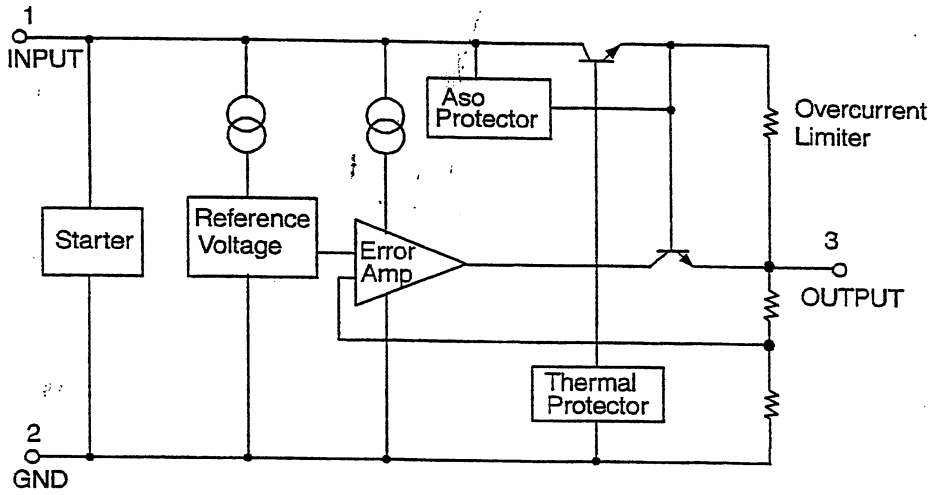
IC301 BU4052BC/B



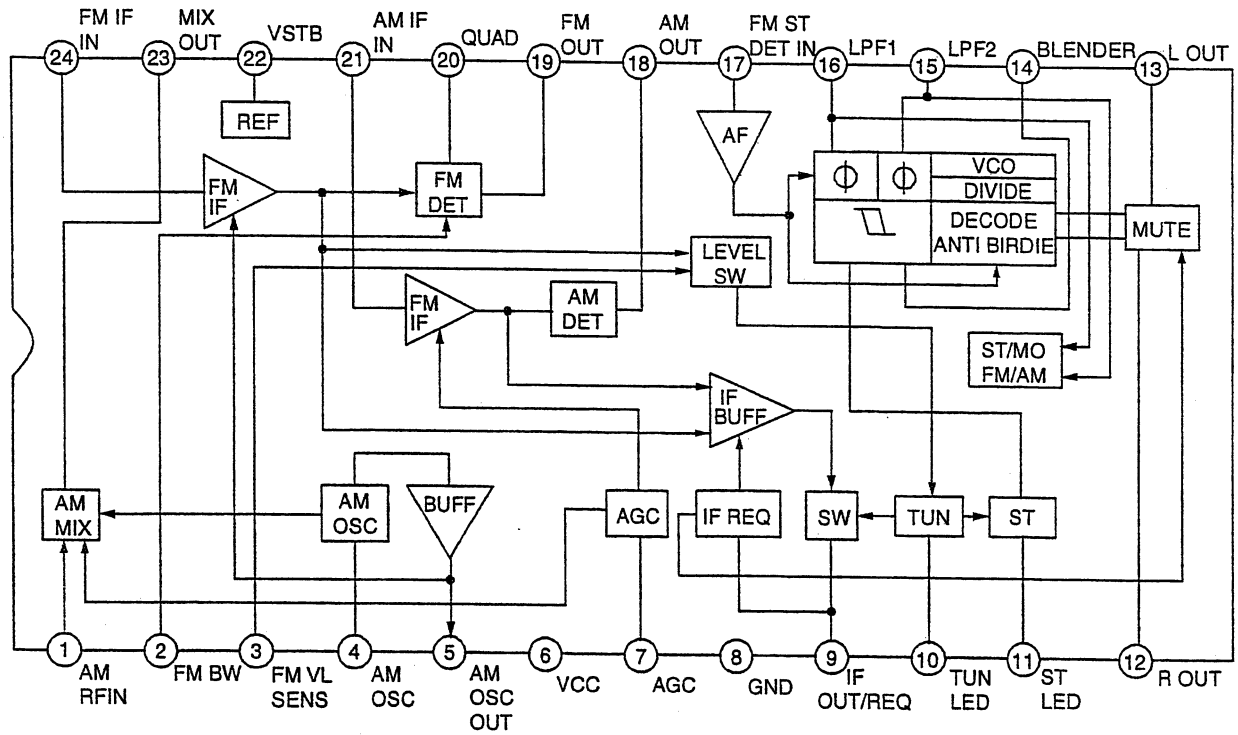
IC4, IC601 BA4558N



IC304 L7806CV

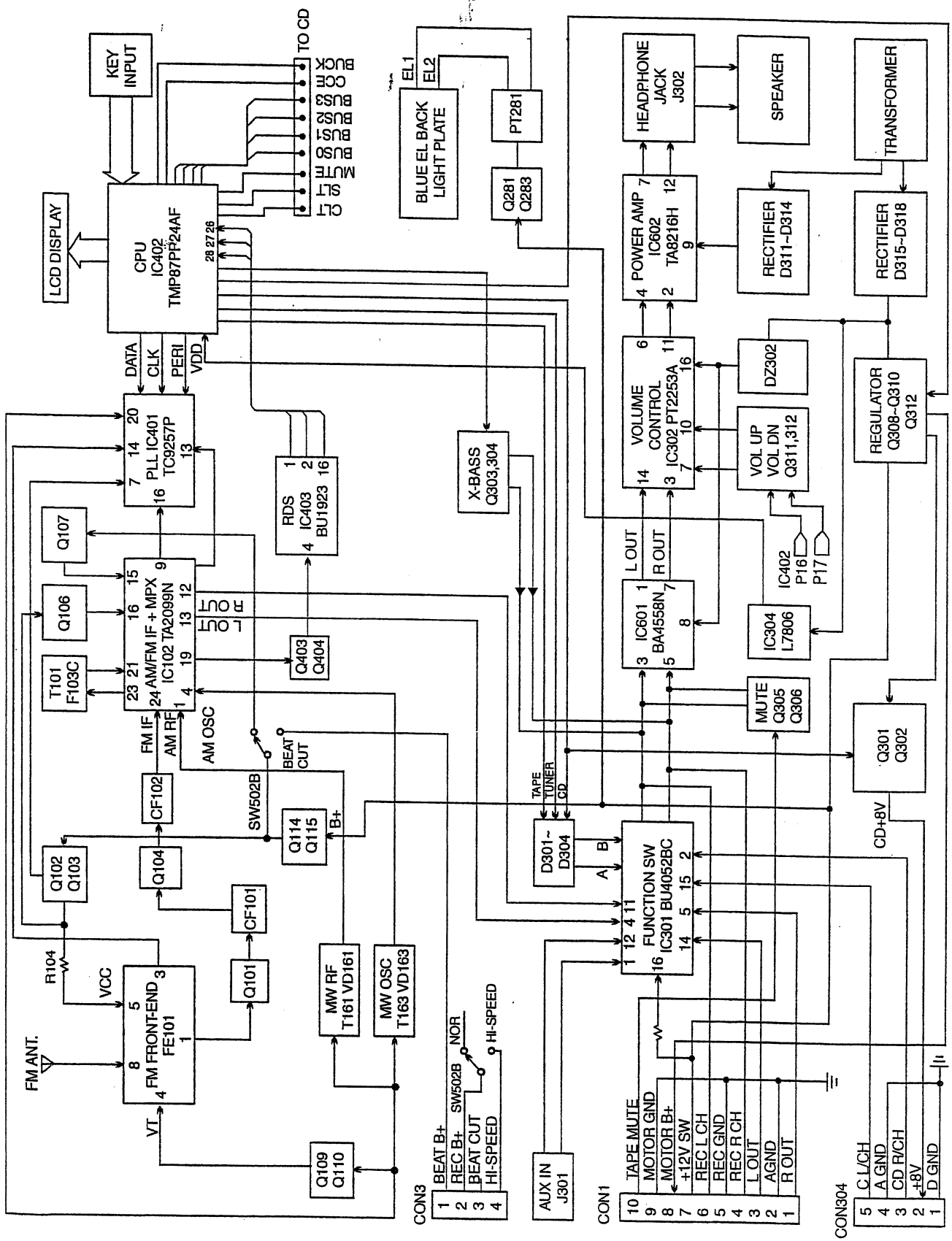


IC102 TA2099N

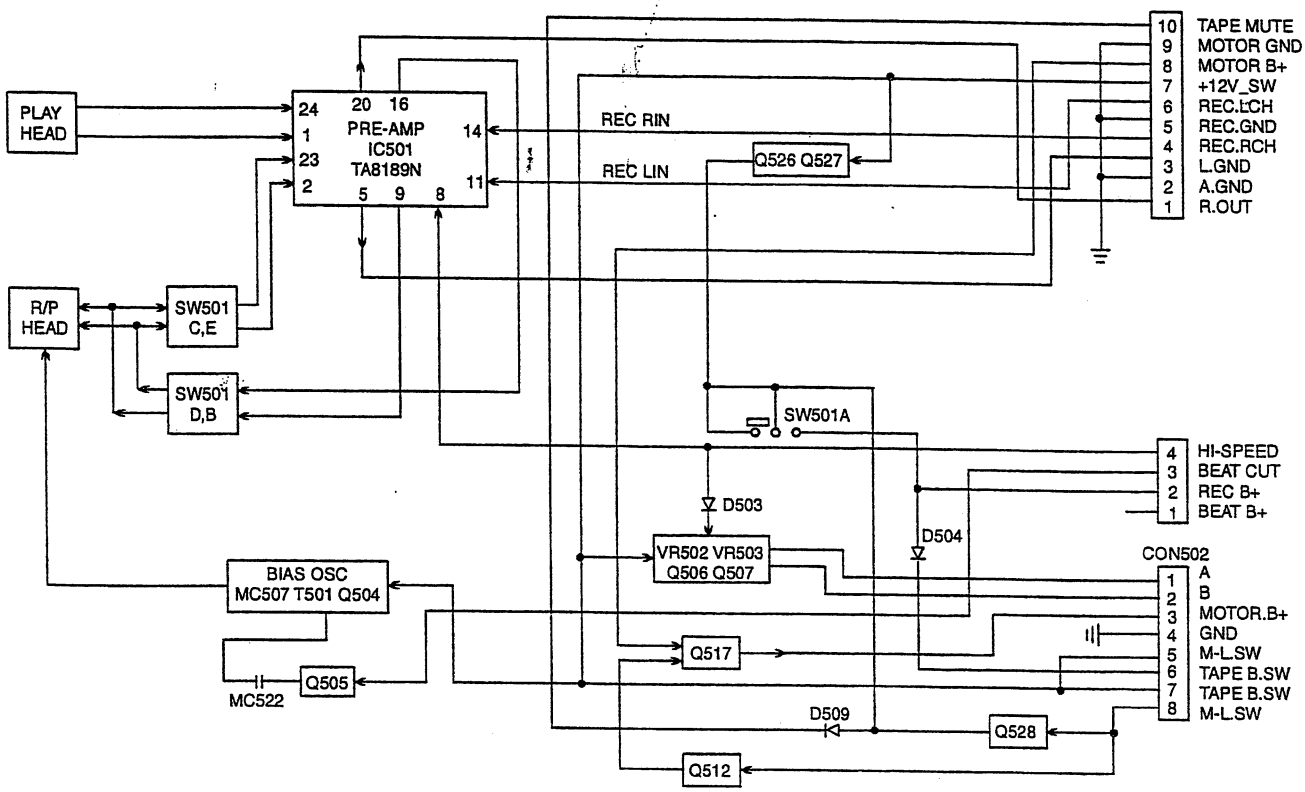


BLOCK DIAGRAMS

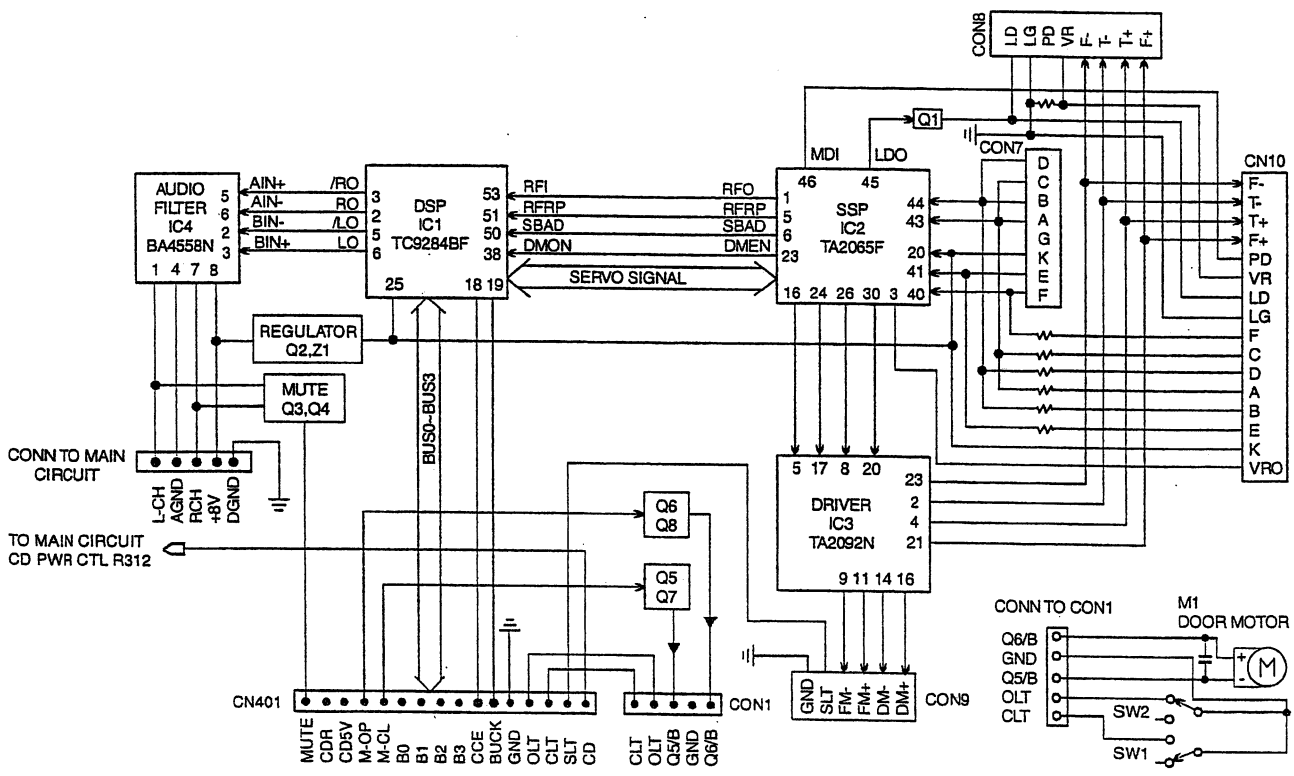
TUNER / DISPLAY CONTROL & POWER AMPLIFIER SECTION



CASSETTE SECTION



CD SECTION



EXPLODED DRAWING - MAIN UNIT